

Exhibit # 833

Revised

Canadian Wildlife Service
Migratory Bird Management Responsibilities
and Activities in northern Canada

presented by

Dr. W.J.D. Stephen

to

the Mackenzie Valley Pipeline Inquiry

The Canadian Wildlife Service is solely responsible for the administration of the Migratory Birds Convention Act and related regulations in Canada that resulted from the terms of the Migratory Bird Treaty of 1916 between Canada and the United States.

Due to the social and economic implications that may result from the administration of the Migratory Birds Convention Act, the Canadian Wildlife Service actively seeks the advice, cooperation and assistance of each provincial and territorial wildlife agency.

Although the Canadian Wildlife Service is directly responsible for migratory birds, their nests and eggs, migratory bird habitat generally is under the administrative control of the Provinces (south of 60°N Lat.) or the Department of Indian and Northern Affairs (north of 60°N Lat.) except where the habitat is owned by the Canadian Wildlife Service or in Migratory Bird Sanctuaries where the Canadian Wildlife Service has legislative responsibilities.

Although DINA controls both the land surface and subsurface in the NWT including lands within Migratory Bird Sanctuaries, Section 9 of the Sanctuary Regulations provides the legislative authority to the

CANADIAN ARCTIC
GAS STUDY LTD.

MAY -7 1976

LIBRARY



Digitized by the Internet Archive
in 2025 with funding from
University of Toronto

<https://archive.org/details/31761120644406>

point where annual production is virtually stopped. We do not have adequate information on the effects of disturbance or land use changes on the behaviour, reproduction or physiology of northern populations. It should be emphasized that only long-term ^{investigations} ~~research~~ will fully assess the effects of man-made impacts in combination with natural variations in environmental stresses.

Interests in migratory birds are varied and many. While it has generally been accepted that ^{hunter} ~~consumptive users~~ are the largest and most important interest group, recent evidence indicates that this may no longer be the case. ~~Non-consumptive users~~ ^{photographers, students, and observers} are increasing at a phenomenal rate in North America. Estimates of numbers of participants are difficult to generate, but indications are that ~~non-consumptive~~ use of the migratory bird resource is increasing at a rate far exceeding ^{the} rates of growth of population or national income. Membership in the National Audubon Society, for example, increased from 142,000 in 1970 to 321,000 in 1975. Subscriptions for the National Wildlife Federation membership more than doubled in the one year period from 1974 to 1975. These rates of increase are chosen, not because they are the exception, but because they are the rule. Hunting provides tens of millions of recreation days to hunters in Canada and the United States. Some two million hunters in the United States harvested over thirteen million waterfowl last year. In Canada, the number of permit sales has grown steadily since 1967 and the migratory bird resource is becoming the basis for more and more recreational activity. There are now close to 1/2 million Migratory Bird Permit holders in Canada (Slides 3, 4, 5).

Another group of hunters rely on the resource, not for recreation days, but for subsistence. Harvest by the Indian and Inuit peoples of Canada, in addition to being an important source of food, is having an important impact on the bird resource. A study undertaken by the James Bay Hydro Commission concluded that Indian hunters and trappers harvested 50,000 Lesser Snow Geese along the coastal areas of southern Hudson and James bays in 1974. This exceeds the entire ^{perennial} harvest of Lesser Snows for Manitoba, Ontario and Quebec combined in the same year. Potential land claims by native people, especially in areas delineated as major goose nesting colonies and their claims to a fixed proportion of the annual harvest will add a confounding dimension to migratory bird management in North America.

In addition to the importance of this region to migratory birds, this area is also the most active in Canada relative to industrial development.

Forecast depletion of conventional oil and gas reserves in world markets has encouraged intensive exploration and development in the north. In addition to the Mackenzie Valley Pipeline, other major oil and/or gas pipelines from the eastern and western arctic (such as the Eastern Arctic Pipeline) have been proposed. In spite of this, forecast energy shortages have encouraged exploitation of unconventional reserves such as the ^{Alberta} Athabasca Oil Sands. Related to oil and gas extraction, at least nineteen major petrochemical developments are proposed for Western and Northern Region. Emphasis is also steadily shifting to coal as an energy source for power generation. Major strip-mining developments are

planned for Alberta and Saskatchewan (eg. East Slopes) including proposals for five coal-fired thermal generating plants. In the area of hydro, not less than sixteen hydro-electric developments are anticipated for the region by the year 2000 and numerous other development sites have been identified as future possibilities. Increasing interest in nuclear power could result in the development of nine generating stations in Manitoba between the years 1988 and 2000. Global demands for minerals have also stimulated mining interest and some fifteen major deposits (mainly in the NWT) are presently under exploration for future development. These industrial activities have encouraged the growth and establishment of urban centres and, in some instances, have introduced human settlement into areas previously unoccupied.

Agricultural development is also of major importance in Western and Northern Region. Continued expansion of cultivated lands has resulted in over 135 million acres of agricultural land in the three prairie provinces and, with foreseeable demands for food production, this acreage is expanding in conjunction with more intensive and efficient agricultural practices.

The cumulative results of these developments is a general reduction in the quantity and quality of migratory bird habitat while escalating demands on migratory bird resources through more intensive use by man for educational, cultural and economic reasons.

With the current development trends in northern Canada and the implications these development may have on migratory bird populations and habitats, there is increased need for more intensive migratory bird management efforts.

Utilization of migratory birds in the Mackenzie Valley has remained relatively stable and relates primarily to subsistence use of migratory birds. This stability is reflected in the historic bag limit restrictions established primarily by trial and error over the years (Tables 1 and 2).

These regulations will require refinement as the potential for utilization accelerates resulting from the development of northern energy resources.

A further concern is that major hunting effort will take place in traditional staging areas (areas of concentration) where young of the year are more vulnerable to harvest. The disturbance of birds during the relatively short but critical northern fall staging period, both by hunting and other activities, could have a major impact on continental migratory bird populations.

Table 1. Season Length - Northwest Territories and Yukon.

Year	Zone	Season Length	
		(a) Ducks, Geese & Coots	(b,c) Days
1917-35	NWT & Y	S1-D14	105
1936-41	NWT & Y	S1-031	61
1942-45	NWT	S1-N14	75
	Yukon	S1-N30	91
1946	NWT	S1-N14	75
	Yukon	S1-N15	76
1947-50	NWT & Y	S1-015	45
1951-66	NWT	S1-015	45
	Yukon	S1-031	61
1967-74	NWT & Y	S1-031	61

(a) Closed season on individual duck species as follows:

- Wood duck - 1917 to 1948
- Eiders - 1917 to 1922

(b) Including brant. All specific reference to brant is dropped after 1952.

(c) Closed season on goose species as follows:

- White-bellied brant in both territories - 1936 to 1942. NWT only - 1949-52.
- Ross' geese in NWT only - 1941 to 1952, in both territories - 1953 to 1964.

(d) Total calendar days. Sunday hunting is permitted in both territories, therefore, the actual number of hunting days is the same as the calendar period.

Table 2. Bag Limits - Northwest Territories and Yukon.

Year (a)	Hunter Class (b)	Ducks (c)			Geese (c,d)			Coots (e,f)		
		D	S	P	D	S	P	D	S	P
1920-35	R & NR	25	-	-	15+15	-	-	25	-	-
1936-45	R & NR	25	150	-	15+15	50	-	25	-	-
1946	R	25	150	-	15+15	50	-	25	-	-
	NR	12	150	-	5	25	-	25	-	-
1947	R	25	150	-	15+15	50	-	25	-	-
	NR	7	100	14	5	25	15	25	-	-
1948-52	R-Yukon	25	125	-	15+15	40	-	25	-	-
	R-N.W.T.	25	150	-	15+15	50	-	25	-	-
	NR	7	100	14	5	25	10	25	-	-
1953-58	R	25	-	-	15	-	-	25	-	-
	NR	8	-	16	5	-	10	25	-	-
1959	R	25	-	-	15	-	-	25	-	-
	NR	7	-	14	5	-	10	25	-	-
1960	R	25	-	-	15	-	-	25	-	-
	NR	7	-	14	5	-	10	25	-	14
1961-62	R	25	-	-	15	-	-	25	-	-
	NR	5	-	10	5	-	10	5	-	10
1963-66	R	25	-	-	15	-	-	25	-	-
	NR	5	-	10	5	-	10	5	-	10
1967	R	25	-	-	15	-	-	25	-	-
	NR	8	-	16	5	-	10	8	-	16
1968-69	R	25	-	-	15	-	-	25	-	-
	NR	6	-	12	5	-	10	8	-	16
1970-71	R	25	-	-	15	-	-	25	-	-
	NR	8	-	16	5	-	10	8	-	16
1972-74	R	25	-	-	15	-	-	25	-	-
	NR	8	-	16	5	-	10	25	-	-

(a) Bag limits are not mentioned prior to 1920.

(b) R = Resident, NR = Non-resident. Limits apply to both territories unless otherwise stated.

(c) Limits for individual species are listed in a separate table.

(d) Goose limits are for brant and other geese in the aggregate except for the indicated daily limits from 1920 to 1952 when 15 brant (black brant only from 1936 to 1952) could be taken per day in addition to 15 other geese.

(e) The limits for coots are aggregate figures from the following species:
 - 1920 to 1943 and 1954 to 1966 - rails, coots and gallinules.
 - 1944 to 1953 and 1967 to 1974 - rails and coots.

(f) From 1960 to 1971 non-resident Indians, Eskimos, Metis and other persons living by trapping and hunting could take 25 per day with no possession limit.

All migratory birds (game and non-game species) have the following essential requirements: (1) breeding, (2) brood rearing, (3) moulting, (4) staging and migration, and (5) wintering. Although all of these activities occur in this region, the highest regional priorities are for breeding, brood rearing, and migration and staging. Wintering generally occurs in other parts of North, Central or South America.

Although species population objectives for migratory birds management must consider a vast array of social, economic and biological factors, the management of migratory birds is primarily based on the numerical status of a species, and the relationship between species requirements and habitat types.

Even in southern Canada where research effort has been concentrated, there is a lack of quantitative information describing the relationship between migratory bird populations and habitats. Research on the relationship of northern populations and their habitat requirements has been conducted for only a few species but even in some of these areas, we are only in the preliminary stages of understanding the species involved (e.g. white-fronted geese).

It is unlikely the Canadian Wildlife Service ^{in its current state} will be in a position to gather or supply the data necessary to ensure the adequate protection of migratory birds in the north. The Canadian Wildlife Service is currently reorganizing from two to five regions in order to conform to its recently assigned position in the Environmental Management Service (EMS) of Environment Canada. There are five regions of EMS each having a Regional Director General to whom the Regional Director of the Canadian Wildlife Service reports. In addition, each component of EMS, including the Canadian Wildlife Service, has a Staff Director General residing in Ottawa.

As a result of this two-way organizational structure (i.e. matrix), line management of projects and programs is regionalized under the EMS Regional Director General with national policy and program coordinating being centered in Ottawa via the Staff Director General of the Canadian Wildlife Service. Consequently, regional programs must reflect (1) the objectives of Environment Canada as defined in the Government Organization Act of 1970 (assented 10 June 1971); (2) EMS national priorities; and (3) the national migratory bird objectives of the Canadian Wildlife Service. Within this framework, the Canadian Wildlife Service must also include provincial, territorial and international concerns.

This expansion from two to five regions has taken place within existing manpower and resources; consequently, research and management capabilities have been reduced at a time when impacts on migratory birds and their habitats are increasing. Concomitantly, there is an increased demand from government and private interests on this region of the Canadian Wildlife Service for research and/or advice. The result is that the Canadian Wildlife Service is sorely taxed to meet its current responsibilities and obligations in northern and southern Canada.

In order to carry out the regional migratory bird activities, the Migratory Birds Division is organized into five program areas:

(1) Migratory Birds Research and Surveys, (2) Avian Problems, (3) Habitat Management, (4) Migratory Birds Regulations and Enforcement, and (5) Migratory Birds Ecological Assessment.

In brief, the responsibilities and resources associated with these five program areas are as follows:

Summary of Programs and Operational Costs

(1) Migratory Birds Research and Surveys

The overall objective of the Migratory Birds Research and Surveys Section is to acquire precise population and ecological knowledge required to intelligently manage and protect the migratory bird resource. Traditionally the research and surveys functions have worked at two levels. Surveys personnel provide the broad overview of population status required for regulating harvest allocations. Research activity has been addressed to solving more specific problems or phenomena concerning populations or habitat.

While the traditional roles are valid and will be maintained the aim of the section is to develop more interaction between the research and surveys functions and the other sections within the Migratory Birds Division. In order to come to grips with such fundamental problems as land use conflicts and migratory bird population declines in the prairie provinces we require integrated investigations at both the intensive and extensive levels.

(2) Avian Problems

This program is designed to focus on socially and biologically acceptable solutions to conflicts between man and migratory birds. The existing program is focused on the conflict between ^{crop damage} agriculture and migratory birds. Other areas of program involvement relate to bird strikes by aircraft, urban development/wildlife problems, and the evaluation of bird dispersing techniques applicable to agriculture, toxic materials spill contingency plans, and areas having disease problems.

(3) Habitat Management

Habitat is one of the most important factors that determines and regulates the numbers of wildlife residing in or passing through Canada. Thus the very survival of wildlife in Canada is dependent upon the maintenance of suitable habitat. It is the responsibility of the Habitat Management Section to identify, either independently or in cooperation with CWS personnel, other agencies, organizations and individuals, important, threatened or critical wildlife habitat. Following selection of this habitat an attempt is made to secure these areas through acquisition, ^{in fee simple} lease, cooperation or other form of agreement. On lands under CWS control, this section is responsible for the administration and management of these areas for the optimum use of wildlife, public recreation, and other compatible activities.

(4) Migratory Birds Regulations and Enforcement

This program is responsible for establishing acceptable levels of compliance with the Migratory Birds Convention Act and Regulations thereunder.

This is accomplished through close liaison with other federal (particularly R.C.M.P.) provincial, and U.S. Fish and Wildlife Enforcement personnel; analyzing migratory enforcement problems and developing solutions to such problems in conjunction with other interests; planning and presenting migratory bird training programs with the R.C.M.P., provincial agencies and technical institutes; developing and carrying out cooperative operational enforcement programs; interpreting the Migratory Birds Convention Act and regulations thereunder to other

enforcement personnel; issuing all permits under the authority of the MBCA; acting as the focal point for the CWS in all investigations involving migratory birds within the responsibilities and authority of the MBCA.

(5) Migratory Birds Ecological Assessment

The Ecological Assessment Section carries out migratory bird habitat and species impact-related studies throughout the region. This unit defines the existing and probable habitat states by carrying out a variety of studies, and designs and recommends ways by which negative effects on migratory birds, and their habitat, can be reduced. The section carries out studies of migratory birds including sea birds and their habitats in all parts of the region, including areas such as the Alberta Oil Sands, Lancaster Sound, Saskatchewan-Nelson basin, etc. In addition, the loss of migratory bird habitat due to agricultural practices on the prairies is of major concern to this program.

	<u>MY</u>	<u>Operating \$</u>
1) Migratory Birds Research and Surveys	21	305,283
2) Avian Problems	4	33,822
3) Habitat Management	7	212,360
4) Migratory Birds Regulations & Enforcement	5	39,755
5) Migratory Birds Ecological Assessment	<u>11</u>	<u>232,519</u>
TOTAL	48	823,733

Note: This total excludes the Chief, Migratory Birds Division and the Division Secretary. Totals also exclude salaries and capital.

The problem of adequately carrying out the preceding programs over an expanse of country nearly 2/3 the size of Canada (2.6/3.8 million square miles) with a total of 48 man years is obvious, particularly when one considers the significance of this geographic area to North American migratory birds. Due to the present workload, the Canadian Wildlife Service has not been able to thoroughly investigate, analyse and predict what the likely ecological effects will be of northern development on the migratory bird populations over this vast area. As a result, measures to prevent or mitigate the consequences of these developments on migratory bird populations are poorly understood or entirely lacking. In order to meet these demands the following resources would be required:

A. Migratory Birds Regulations and Enforcement	MY	\$/YR
a) An additional \$5,000 would be required for the Enforcement Coordinator presently stationed in Inuvik to become more operational in performing the duties vested in this position.		5,000
b) One additional Enforcement Coordinator position (full-time) would be required and likely based out of Yellowknife, N.W.T. with the required operational funds.	1	20,000

B. Migratory Birds Research and Surveys

The following research and/or surveys functions could be performed by a full-time staff and resource supplement of:

	MY	\$/YR
2 RES	2	100,000
3 BI's	3	150,000
5 Technicians	5	

In order to develop refined management strategies for northern migratory bird populations, the following research and survey requirements have been identified:

- Marine Bird Ecology
- Breeding Ecology of Arctic Nesting Migratory Birds
- Migratory Bird Surveys
- Surveys of Native Migratory Bird Harvest

Additional funds for contracted research

- | | |
|---|---------|
| (1) Feeding Ecology and physiology of geese on
moulting grounds (3 years @ 60,000/yr) | 60,000 |
| (2) Feeding Ecology and Reproduction of breeding
geese (5 years @ 35,000/yr) | 35,000 |
| (3) 1:250,000 mapping of surficial geology, vegetation
and all migratory bird use of various communities
in Arctic islands and coastal plains (5 years @
100,000/yr) | 100,000 |

C. Migratory Birds Ecological Assessment

A supplement of 4 MY (2 BI's and 2 EG's) would be required to gather baseline information and adequately contribute to the technical assessment of development proposals.

4	70,000
---	--------

D. Avian Problems

MY \$/YR

In order to develop operational capability in the development of avian deterrents associated with northern contingency measures related to toxic material spills, airports, etc., one permanent technician would be required.

1 15,000

E. Habitat Management

Currently the N.W.T. does not have a habitat management biologist. The current workloads relating to habitat development, including migratory bird sanctuaries in northern Canada are handled by the Alberta biologist with foreseeable intensification of human activity in the Western Arctic alone warrants one additional biologist and a technician to adequately handle the workload.

2 30,000

F. Administrative Requirements

2 full-time stenographers

2 4,000

1 full-time accounts clerk

1 1,000

Total Manpower Resources
Required for Refined
Management of Migratory
Birds in Northern
Canada _____

21 *\$590,000

* excludes salaries and capital.

The fact that these requirements must be evaluated by the various managerial levels resulting from the normal review protocols, even if approved, the delays encountered would create an undesirable situation

from the standpoint of acquiring the information necessary to refine our management strategies on migratory birds. For example, any behavioural research relating to the effects of aircraft on snow goose productivity would require a well designed study over perhaps a 2-3-year period. This may appear to be an unreasonably long period of time but one must bear in mind that geese nest only once a year and in order to make the results of such an investigation meaningful it would require knowledge of the predisturbance situation in conjunction with a vast array of factors such as climatic influences, nesting requirements, brood requirements, physiology, and mortality to mention only a few.

The social, ecological and economic significance of migratory birds from a local, national and international perspective make it of paramount importance that proposed activities directly or indirectly related to petroleum exploration, production and transport in northern Canada do not adversely affect the migratory bird resource. It is recommended that the Canadian Wildlife Service be in a strong position to adequately research the concerns identified and develop sound local, national and international migratory bird management strategies before potentially damaging activities commence.

Problems associated with any inspection and monitoring of pipeline developments may best be considered separately from the long-term manpower and resource needs previously discussed for managing the migratory bird resource. Although I will not elaborate on inspection and monitoring requirements for the Canadian Wildlife Service relative to pipeline development proposals, it seems only reasonable to assume that these needs (either enforcement or research oriented) would have to

supplement ongoing program requirements. In view of the multitude of interests (private and government) that would be involved in any pipeline development there seems to be an obvious requirement for some form of coordinated inspection (i.e. enforcement) without dilution of the existing jurisdictional framework. For me to attempt to predict the enforcement staff requirements for pipeline construction activities would be premature and somewhat conjectural but there is little doubt that there would be a need for additional staff in this area.

From an ecological standpoint, it would be extremely valuable to monitor pipeline development activities and their effect on the ecology of migratory birds. Of particular importance in this regard would be the evaluation of regulatory constraints imposed on such a development to determine their adequacy. As with enforcement, I believe it would be conjectural for me to try and identify what would be required in the area of monitoring. This is particularly true when one considers the number of interested private and government agencies that would likely be involved. Monitoring programs would have to be coordinated and they would definitely require supplementary manpower and funds. I might also add that monitoring studies invariably require intensive predevelopment knowledge of biotic systems as well as post development. I make this point to clarify the fact that in the chronology of any development time must be allowed for predevelopment studies to take place that will yield statistically comparable results with studies conducted during the construction, operation and abandonment of the development.

